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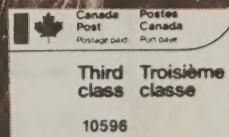
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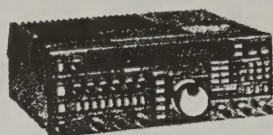
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DMXMD-56

100S 61/2

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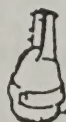
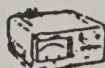
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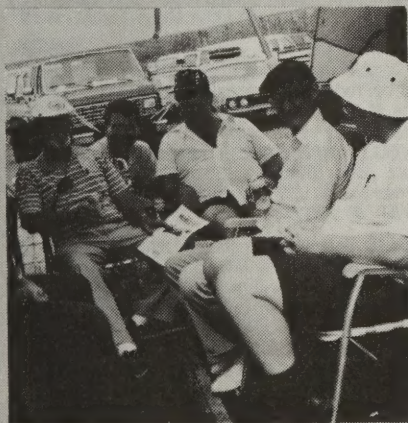
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ABOUT THE COVER



When amateurs get together, they do a lot of talking, and talking makes them thirsty. Chatham-Kent ARC members at the 1990 Dayton Hamvention® (l-r): VE3s MAC, KSV, KUC, CXK and NGG conduct a group discussion to see who is going to replenish supplies. (VE3OEU photo) ■

It Seems to Us.../Il nous semble...

CPC 2-0-03

The first of October should have been a happy day for Canadian Amateur Radio. After five years of work by DOC and the Canadian Amateur Radio community, the Restructured Amateur Service was in effect. So was Deregulation of Mode Subbands, and while not everyone felt this was the best thing, it will probably serve Canadian Amateur Radio well in the long run. For us, the happiness of October 1, was marred by a DOC document that we had received only a few days earlier. CPC (Client Procedures Circular) 2-0-03, *Municipal Consultation on Non-Broadcasting Antennas and Antenna Supporting Structures*, came to us in a plain brown wrapper, though we have since found that if you ask for it in the right way, you can get a copy over the counter. It is a potential nightmare for all Canadian amateurs. Before erecting antennas or antenna supporting structures, amateurs will have to file forms with DOC stating that they have contacted their municipality and obtained a building permit or some other written approval. The amateur can choose not to contact the municipality, but in that case, DOC may not support the amateur if the municipality later objects, and DOC may require the amateur to dismantle or modify the antenna or its supporting structure. There's more, but we don't want to repeat information that already appears in the "Happenings" column. Skip over to page 7 and read the section about CPC 2-0-03. We'll wait for you right here...

So what's wrong with CPC 2-0-03? For starters, the scope of the document is far too great. As crafted, the CPC applies to all antennas, even to wire antennas erected between pre-existing supports. An amateur who wants to erect only a modest antenna system and decides to "play it safe" by notifying a municipality, will become target for all kinds of "agendas" of persons living nearby, agendas that may be only incidentally related to the antenna or its supporting structure. These agendas could include pre-existing personal conflicts, unreasonable aesthetic, environmental or safety concerns (including concerns about non-ionizing radiation), and concerns about possible "interference" to televisions, stereo equipment, and the like.

We find the concept of "significant antenna structure" in the September 20 version of the CPC to be extremely arbitrary. According to CPC 2-0-03, local DOC personnel will make the final decision about whether the antenna and supporting structure goes up or not. It is well known that DOC offices are understaffed and DOC personnel are overworked. Will DOC really have the time or the manpower

to deal effectively with all the cases that will come before it? It doesn't need much imagination to envision a scenario where an individual DOC official rules against an amateur just to move a case out of the office and get on with other work.

In the US, the FCC does not rule on individual antennas or supporting structures. For better or for worse, the job is left to municipalities. However, in regulating antennas and their supporting structures, municipalities must observe two key principles outlined in FCC's PRB-1: "...local regulations which involve placement, screening or height of antennas based on health, safety or aesthetic considerations must be crafted to accommodate reasonably amateur communications, and to represent the minimum practicable regulation to accomplish the local authority's legitimate purpose." (FCC *Memorandum Opinion and Order*, September 19, 1985). Since PRB-1, the concept of what is "reasonable" has been tested in the courts. In *Thernes vs. Lakeside Park*, 1987, the US District Court of Eastern Kentucky found that a 65' tower with an 8' mast carrying a tribander and shortened 40-metre beam, was indeed "reasonable", and could not be subject to municipal regulation.

Finally, the CPC applies to antennas and supporting structures erected by licensed radio amateurs, but not to antennas and supporting structures erected by the general public for television reception. This is unfair because an antenna and tower used for television reception can be just as "significant" as one used for Amateur Radio communications. We need to do more research on our next point, but we're fairly certain that the Canada Building Code does not set standards for antenna towers, except in the case of towers mounted on pre-existing structures like apartment buildings. If this is so, municipalities will begin to develop their own standards, leading to arbitrary and unequal treatment of radio amateurs from one municipality to another.

We believe that DOC should abandon CPC 2-0-03. Canadian amateurs have been well served by the principle that municipalities may not regulate the height and placement of antennas or antenna supporting structures in the case of federally-licensed installations. If DOC feels it must have municipal input for particular installations, DOC needs to be very precise about the size and type of antennas and antenna supporting structures for which it will seek input. Anything less will bring unnecessary hardships to many Canadian amateurs. More on all this later. —Harry MacLean, VE3GRO ■

All letters are considered carefully. Letters are edited and may be condensed in order to have more information and readers' views presented. The publishers of *QST Canada* assume no responsibility for statements made by correspondents.

RADIO SHACK POLICY

I read with interest your editorial in September *QST Canada* regarding Radio Shack and their policy on the 10-metre transceiver. Out of curiosity, I repeated your experiment with a Halifax-based outlet. The transceiver was clearly marked with a warning label and the salesperson would not sell me the rig unless I could show an Amateur Radio licence. He told me it was legal for anyone to buy these rigs, but it was just Radio Shack's policy not to sell them to persons who did not have an Amateur Radio licence. I am happy to report that the company is enforcing the policy here in Nova Scotia

as well as in Ontario. —Paul M Dunphy, VE1PMD, Lake Echo, NS

THE SWEEPER

Over the last 18 months, we have become aware of what appears to be an illegal radio transmission which has the following characteristics:

1. high-power linear periodic sweeper,
2. usual period: exactly 4 or 5 minutes,
3. usual sweep rate: exactly 100 kHz per second; sometimes exactly 25 or 50 kHz per second; frequency increases with time and sweeps up in frequency only,
4. wide sweep width, typically from 5.1 to 24.9 MHz; start and stop frequencies vary

- from session to session,
5. signals often appear in groups, staggered by intervals of exactly 5, 10 or 20 seconds,
6. operates for long periods, often 24 hours a day,
7. appears to a CW or SSB listener as a swish or chirp, as if a local "lid" were playing with a VFO,
8. usually detectable over one or two octaves; signal strength is typically S8 or S9 over portions of its sweep,
9. can be heard during the afternoon in mid-summer, as low as at 5 MHz, and
10. does not appear to be local; has been heard as far away as Hawaii.

The "sweeper" is very easy to hear. Just find a vacant frequency in the 10–14-MHz range, leave your receiver on long enough, and you will be surprised how strong it is, and how often it is on.

We would appreciate hearing from anyone who has heard the "sweeper", or who has knowledge about its purpose or location. The "sweeper" is very annoying when operating digital modes like RTTY, or when trying to receive weak signals. It causes the receiver AVC to kick in and you can lose a considerable portion of a transmission. A coordinated effort by Amateur Radio operators across Canada may help solve the mystery of the "sweeper". —Markus Hansen, VE7CA, 674 St Ives Cr., Vancouver, BC V7N 2X3, Tel (604) 998-9965. ■

The Canadian Radio Relay League, Inc La Ligue Canadienne de la Radio Amateur, Inc



The Canadian Radio Relay League (CRRRL) is a noncommercial association of radio amateurs organized for the promotion of Amateur Radio communications and experimentation, for the establishment of networks to provide communications in the event of disasters or other emergencies, for the advancement of the radio art and the public welfare, for the representation of radio amateurs in legislative and other matters, and for the maintenance of fraternalism and a high standard of conduct.

CRRRL is incorporated under the Canada Corporations Act. Its affairs are governed by a seven-member Board of Directors elected every two years by the CRRRL general membership. CRRRL is noncommercial, and no one who could gain financially by the shaping of its affairs is eligible for membership on its Board.

CRRRL is the Canadian member-society of the International Amateur Radio Union (IARU). "Of, by and for the Canadian Radio Amateur", CRRRL numbers within its ranks the vast majority of active amateurs in the nation and has a proud history of achievement in amateur affairs.

A bona fide interest in Amateur Radio is the only essential requirement for membership. An Amateur Radio licence is not required, although full voting membership is granted only to licensed amateurs in Canada.

Membership inquiries and general correspondence should be directed to CRRRL Headquarters, Box 7009, Station E, London, ON N5Y 4J9 (519) 660-1200.

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Calendar



Attention: Deadline for items is the 20th of the second month preceding month of publication. For example, information should reach *QST Canada* by January 20 to be included in a March issue.

Newmarket, ON: 14th Annual Fleamarket, November 10, at Huron Heights Secondary School. Sponsored by York Region Amateur Radio Club (YARC). Opens at 0900. Admission: \$5. Tables (6-feet long, available only by mail): \$10 each. Talk-in on VE3YRC, 147.225 MHz (+). For more information, contact John Ellison, VE3WHY, YARC, Box 352, Newmarket, ON L3Y 4X7, Tel (416) 841-6220, PBBS VE3WHY @ VE3YRA.

ON4CLM: Special-event station ON4CLM (Canadian Liberation Movement) will operate from October 29–November 04, to commemorate the liberation of Knokke-Heist, Belgium, by Canadian troops on 1944 November 01. Frequencies: CW: 3.515, 7.012, 14.02, 21.02, and 28.02 MHz; SSB: 3.685, 7.045, 14.145, 21.245, and 28.545 MHz. Special certificate (send US \$5 or 10 IRCs) features the cap badge of the Cameron Highlanders of Ottawa.

QST Award Party: Sponsored by CRRRL. Phone. 1400–2200 UTC, November 3 and 4, 14.13 and 21.25 MHz, other bands if conditions permit. CW. 1400–2200 UTC, November 10 and 11, low ends of the 15- and 20-metre bands. Thirteen stations with a "QST" suffix are expected to be on the air. Work any eight different stations for the CRRRL *Worked QST Award*. Send copy of log and SASE or IRCs to CRRRL Awards Manager Garry Hammond, VE3XN, 5 McLaren Ave, Listowel, ON N4W 3K1. ■

A Half-Size G5RV

An inexpensive alternative to commercial multibanders.

By Paul Dunphy, VE1PMD
3351 Highway 7
Lake Echo, NS B0J 2S0

Many operators in the Amateur Radio community are familiar with the G5RV antenna. It was originally designed by Louis Varney, G5RV, in 1946. It is a multiband centred antenna, 102 feet long, with a 30–33-foot matching section between the antenna and the coax. It can operate on all bands from 80 to 10 metres, including the 30-, 17- and 12-metre WARC bands.

Amateurs familiar with this antenna also know that you can cut its dimensions in half and lose only the use of the 75/80-metre band. (But the antenna can still be used on this band with the simple modification explained below.) This “half-size G5RV” is attractive because it has a total length of just 51 feet, can be installed as low as 20 feet above the ground, and will still give excellent results. The cost is comparable to that of a standard dipole. The only extra cost is for a section of window or ladder line. If you are restricted by space and don't wish to invest in an expensive commercial multiband antenna, the half-size G5RV may be for you.

Several variations of the G5RV exist. One version is described on page 33-8 of the 1990 *ARRL Handbook*. I've seen other versions in various antenna books. I built mine very close to the design given in an article written by the inventor in the 1984 July issue of the RSGB journal, *Radio Communications*. In this article, Lou Varney gives an excellent explanation of the electrical and performance characteristics of the G5RV. As for my half-size G5RV, I have been very happy with the results. I have used it on all bands except 3.5 MHz, and I have worked many stations, both local and DX, with 100 watts or less.

Construction

I don't have much room for antennas, so I installed my half-size G5RV in several trees behind my house. I used a slightly inverted-V formation about 23 feet above the ground at the centre. The flat-top has about 26-1/2 feet of #14 stranded copper wire on each side. The ends are about 18 feet above ground.

I selected 17 feet of 450-ohm window line for the matching section instead of a 14-foot 3-inches of 300-ohm twinlead suggested by the *ARRL Handbook*. I chose window line because it is much less susceptible to loss than twinlead with

its solid insulation. Window cable is relatively free from detuning caused by rain and snow—common weather at this QTH. Since the matching section always carries a standing wave, actual impedance is not important. I happened to have access to 450-ohm window line and used 17 feet as Varney suggested. The increased physical length compensated for the fact that the velocity factor of window line is greater than that of solid-insulation twinlead.

Both Louis Varney and the *ARRL Handbook* recommend at least 68 feet of coax transmission line after the matching section. I used about 100 feet of RG-58/U. As with the matching section, the coax will inevitably carry standing waves. Because of this, the actual characteristic impedance of the coax is not critical: either 50-ohm or 75-ohm coax can be used. I connected the coax directly to the matching section as in Figure 1.

The window line should hang vertically and be as straight as possible. I have my centre insulator tied to the limb of a tree and the bottom of the cable tied to the tree trunk to keep the cable straight. I attached the ends of the flat top to a couple of other trees using rubber tie-downs. This allows for stretching during wind movement.

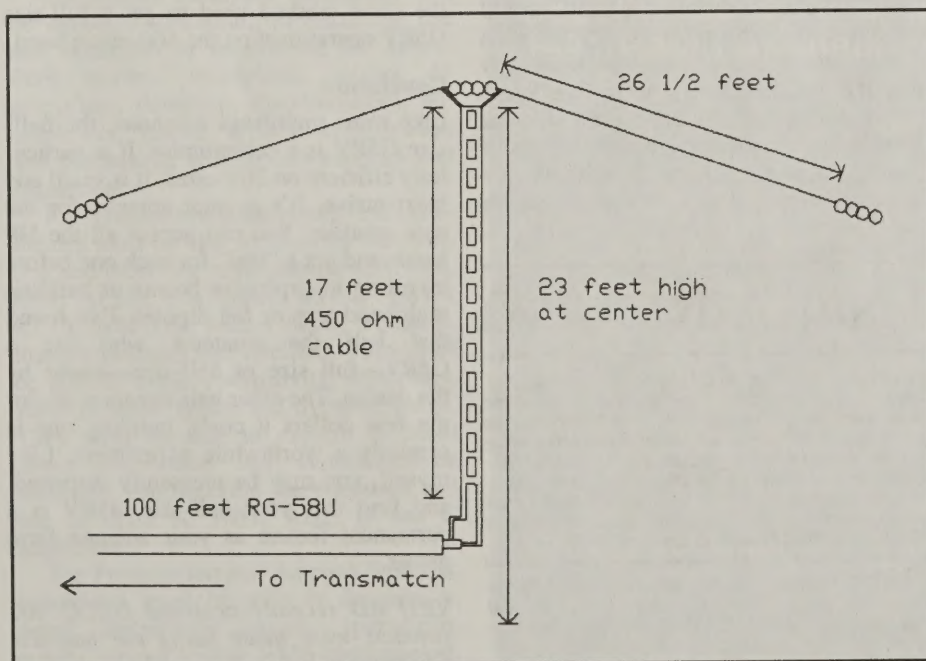
Most of the useful radiation from this and any flat-top antenna takes place on the centre two-thirds of the antenna's length. Some users of the half-size G5RV bend as much as four or five feet at each end of the antenna. They experience little loss of efficiency. If you're really short on space, this will cut down the length of the antenna by some 10 feet. Some amateurs have even installed half-size G5RVs as indoor antennas.

The *ARRL Handbook* suggests winding eight or ten turns of the coax into a coil about six inches in diameter, just below where the coax connects to the matching section. The coil will form a choke that will reduce current flow on the outside of the coax conductor. This can happen under certain conditions because of the balanced to unbalanced connection. I didn't use a this kind of choke because the coax I had was a few metres too short. But this is definitely a good idea, if you can work it.

Loading and SWR

Normally, with a balanced antenna like a G5RV, you wouldn't expect to use a choke. You'd expect to use a balun. We don't usually do this with a G5RV. A balun would probably have trouble han-

Figure 1—The half-size G5RV.



ding the reactive load that this antenna presents on most bands. Only an antenna tuner or transmatch can compensate for these loads. I use the built-in transmatch in my TS-940S, but any commercial or homebrew transmatch should do the job just as well. Figure 2 shows the SWR curves I obtain on the 40-10-metre bands.

The SWR is a bit high on all bands except 20 metres, where I get almost perfect loading. On the other bands, I use the transmatch to bring the system down so it presents a 50-ohm non-reactive load to the transmitter. This agrees with Varney's statement: "The use of a [transmatch] between the coaxial output of a modern transmitter and the coaxial feeder is essential because of the reactive condition presented at the station end of the feeder which, on all bands but the 14-MHz band, will have a fairly high VSWR on it."

It is important to remember that a transmatch can't reduce the VSWR on a half-size G5RV or its transmission line—or on any antenna-transmission line combination for that matter. A transmatch simply hides the high VSWR from the transmitter.

Directivity

I've concluded that the half-size G5RV in my slightly inverted-V formation is essentially omnidirectional. I base this conclusion on signal reports, received over several months from stations in many different locations. When conditions are favourable, I get as good reports from north and south as I do from east and west. Similarly, when conditions are poor, I get weak signal reports from all directions. This is the case on all bands. Admittedly, this is not a very scientific test, but I'm sure I'd have noticed the antenna favouring certain directions if there was some directivity.

Given an ideal height and a true flat-top installation, I'm sure the G5RV would exhibit a degree of directivity on each band. Theoretical directivity from any antenna assumes that it is in free space above perfectly conducting ground, clear from reflections and absorption effects of nearby objects. These conditions are impossible to obtain in any amateur

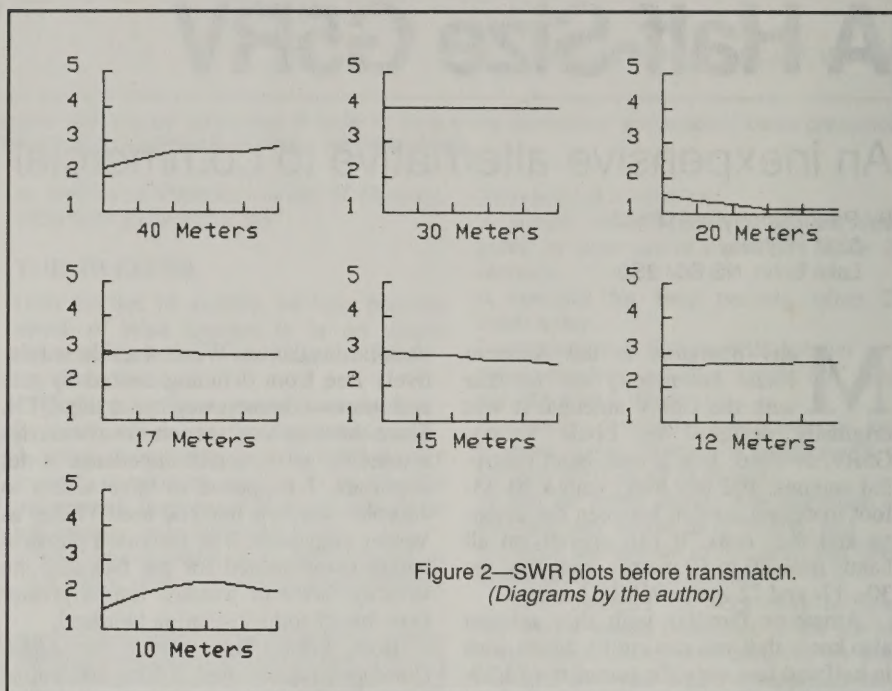


Figure 2—SWR plots before transmatch. (Diagrams by the author)

installation. If you find references that say a half-wave G5RV or any antenna favours a certain direction, don't be surprised if it produces contacts in directions that you don't expect. You'll also find that the antenna may not be as effective in optimal directions as theory predicts.

The Half-Size G5RV on 75/80 Metres

The half-size G5RV can be used on the 75/80-metre band if you short the station end of the coax and feed the whole system (flat top, matching section and coax) with a suitable matching network, against a good ground, a radial system or a counterpoise wire. Both the *ARRL Handbook* and the *Radio Communications* article mention this. I haven't tried it, but many amateurs have, with good results. This is the same method used to get a full-size G5RV operational on the 160-metre band.

Conclusion

Like most multiband antennas, the half-size G5RV is a compromise. It is particularly efficient on 20 metres. It is small and inexpensive. It's a great antenna for the new amateur. You can access all the HF bands and get a "feel" for each one before investing in expensive beams or building multiband trap or fan dipoles. I've found that half the amateurs who use a G5RV—full size or half-size—swear by the design. The other half swears at it! For the few dollars it costs, building one is certainly a worthwhile experiment. Like myself, you may be pleasantly surprised, and find that your half-size G5RV is a permanent fixture as your antenna farm grows.

VE1PMD recently achieved DXCC. All contacts were made using the half-size G5RV described in this article. ■

Top 40 Canadian Field Day Scores

The top forty! Detailed results for all Canadian entrants in 1990 ARRL Field Day will appear in November *QST*.

| Call | Group | Score | Cat |
|--------|---------------------|-------|-----|
| VE3SPC | South Pickering ARC | 7432 | 4A |
| VE3OW | Windsor ARC | 6658 | 6A |
| VE1FO | Halifax ARC | 6264 | 2A |
| VE1ND | Fredericton ARC | 5548 | 3A |
| VE3DC | Hamilton ARC | 5258 | 5A |
| VE7ECC | Abbotsford ARC | 4590 | 3A |
| VE3BA | Brantford ARC | 4400 | 6A |
| VE3JW | OARC/OVMRC | 4398 | 2A |
| VE6NQ | Calgary ARA | 3930 | 2A |
| VE3NAR | Nortown ARC | 3748 | 14A |
| VE7BAR | Burnaby ARC | 3718 | 3A |
| VE2CAM | CRA St-Hyacinthe | 3688 | 3A |
| VE2FC | CRA Sherham | 3678 | 3A |
| VE7VQ | Langley ARA | 3622 | 2A |
| VE5AA | Saskatoon ARA | 3595 | 1A |
| VE3ICV | Cloverdale's Com's | 3550 | 1A |
| VE3QST | London ARC | 3518 | 4A |
| VE3WE | Scarborough ARC | 3496 | 10A |
| VE2CVR | CRA Valée Richelieu | 3364 | 2A |
| VE3HB | Oakville ARC | 3346 | 3A |
| VE3CRC | Chatham-Kent ARC | 3250 | 3A |
| VE3RL | Quinte ARC | 3076 | 3A |
| VE3SOO | Algoma ARC | 3070 | 2A |
| VE7SAR | Surrey ARC | 2998 | 3A |
| VE3IG | Lambton Co ARC | 2916 | 5A |
| VE2CQ | CRA de Québec | 2760 | 2A |
| VE5II | — | 2740 | 2A |
| VE3VM | Niagara Pen ARC | 2600 | 3A |
| VE3RB | Peterborough ARC | 2596 | 2A |
| VE2UMS | UMS de Montréal | 2560 | 1A |
| VE3SAU | Eastern Ont ARC | 2532 | 9A |
| VE7UEP | Ucluelet ARC | 2482 | 3A |
| VE4SO | Four Serious Dudes | 2302 | 1A |
| VE3GAM | (+VE3AUI) | 2280 | 2B2 |
| VE7NA | Nanaimo ARA | 2256 | 2A |
| VE7CVW | Comox Valley ARC | 2196 | 2A |
| VE5YD | Melfort ARC | 2218 | 2A |
| VE2QST | (VE2BP +VE2WH) | 2088 | 1B2 |
| VE2CWI | West Island ARC | 2050 | 4A |
| VE5NN | Regina ARA | 2038 | 2A |

Ham-Ads



Advertisements must pertain to Amateur Radio. For individuals or firms offering products or services for sale, the rate is \$0.50 a word. This is reduced to \$0.25 per word for those seeking to dispose of or acquire personal station equipment. Telephone numbers count as one word. No charge for postal codes. Unless specified, a Ham-Ad will appear in the next available issue of *QST Canada*. Send Ham-Ads to CRRL, Box 7009, Station E, London, ON N5Y 4J9.

WANTED: National NC-33, NC-57 or NC-57B for early 50s station. Harry MacLean, VE3GRO, 500 Riverside Dr, London, ON N6H 2R7, Tel (519) 473-1668.

Restructuring is Here!

Part 2: What you need to know for the new basic and advanced.

By Harry MacLean, VE3GRO
Editor, *QST Canada*

Last month we took you on a tour of the Restructured Amateur Service using a question and answer format. This month we continue, with emphasis on content for the written examinations. Before we begin, an update: Originally, DOC did not plan to give candidates credit if they had passed only one of the theory and regulations tests for the "old" Amateur certificate. DOC has relented on this. Candidates who passed only one the "old" theory or regs tests will be given one year from the time they wrote to retry the test that they missed.

Q. What do candidates have to know to pass the written examination for the Basic qualification?

A. Candidates for the Basic qualification will be tested in five areas: Basic Electronics; Propagation and Antenna Systems; Interference and Suppression; Station Assembly; and Operations, Procedures and Regulations.

For Basic Electronics, candidates must understand the basic concepts and relationships of conductors, insulators, electromotive force, direct current, alternating current, resistance, power, capacitance, inductance, reactance, impedance and resonance. They must be able to define Ohm's law and do simple Ohm's law problems. They must be able to explain the function of a battery, transformer, AC power supply and the blocks of a simple transmitter, receiver and transceiver. They must be able to identify and explain the basic purpose of diodes, transistors, integrated circuits and vacuum tubes, and describe some basic circuits in which these are used.

For Propagation and Antenna Systems, candidates must be able to describe or explain sunspots, sunspot cycle, solar radiation, ionosphere, fading, absorption, refraction, radiation angle, multi-hop MF/HF propagation, VHF/UHF propagation, antenna types, antenna impedance, transmission lines, SWR and matching devices.

For Interference and Suppression, candidates must be able to describe how to suppress front-end overload, audio rectification, harmonics, parasitics and intermodulation products. They must be able to explain the use and show placement of low-pass, high-pass bandpass and band-reject filters, and explain the purpose of shielding and how effective shielding can be accomplished.

For Station Assembly, candidates must be able to explain the basic function of transmitters, receivers, SWR bridges, power supplies, fuses and interconnecting cables, and where applicable, operational control settings. They must be able to explain how to achieve good grounding and lightning protection. They must be able to show the proper position, in relation to one another, of the various pieces of equipment that would be found in a typical amateur station.

For Operations, Procedures and Regulations, candidates must be able to explain operational procedures for various modes including Morse code, voice, RTTY, AMTOR, packet radio, SSTV, FSTV and repeaters. They must be able to explain international and domestic regulations governing the operation of an Amateur Radio Station, demonstrate knowledge of common Q-signals listed in RIC-25, and recognize emergency signals and what procedures should be followed in their use.

Q. What do candidates have to know to pass the written examination for the Advanced qualification?

A. Candidates for the Advanced qualification will be tested in four areas: Circuit Analysis; Transmitters, receivers, Amplifiers and Modulation Techniques; Propagation and Antenna Systems; and Test Equipment and Construction.

For Circuit Analysis, candidates will be expected to explain in detail the use and operation of oscillators, RF amplifiers, buffers, multipliers, mixers, IF amplifiers, detectors, discriminators, AF amplifiers, filters, speech amplification and processing, and power supplies and regulation.

For Transmitters, Receivers, etc., candidates must be able to describe transmitting and receiving principles for CW, AM, SSB, ACSB, FM, pulse, SSTV, FSTV, RTTY, AMTOR, packet radio, repeaters, linear translators and satellites. They must be able to explain sensitivity, selectivity, stability, noise figure and dynamic range. They must be able to explain in detail direct conversion and superhetrodyne receivers, and describe the operation and use of class A, AB1, AB2, B and C amplifiers.

For Propagation and Antenna Systems, candidates must be able to describe in detail ionospheric layers, sporadic-E, aurora, meteor scatter, EME transmission,

tropospheric bending, SWR, baluns, matching networks, transmatches, coaxial cables, balanced lines, velocity factor, dipole, Yagi, quad and trap antennas, grounding, groundplane, virtual height, radiation resistance, mirror image and other propagation-related information.

For test Equipment and Construction, candidates must be able to explain the function and use of multimeters, SWR bridges, marker generators, frequency counters, dip meters, two-tone audio generators, dummy or artificial antennas, oscilloscopes, signal generators, attenuators, spectrum analyzers and other test equipment.

Q. What is the pass mark on these tests?

A. 60%.

Q. In some cases, the syllabus, which you've summarized here, seems lacking in detail. How can you determine exactly what to study?

A. The actual questions on the tests are in the public domain. These are available from CRRL, either from the CRRL Headquarters office in London, Ontario, or through Amateur Radio dealers. But candidates should not use the questions as a text. They should get a proper training manual like CRRL's *Talk to the World*, and then use the examination questions for review. ■

Beat the GST! 1991 Radio Amateur CallBooks

We are now accepting orders for the 1991 North American and International callbooks. If we ship to you before 1990 December 31, you can avoid the GST. Cost: North American or International callbook: \$38 (\$36 plus \$2 postage). North American and International callbooks: \$73.50 (\$70 plus \$3.50 postage). Date your cheques 1990 December 6—we won't cash them until we are ready to ship. (Ontario residents: Sorry, but you still have to pay 8% provincial sales tax on the \$38 or \$73.50.)

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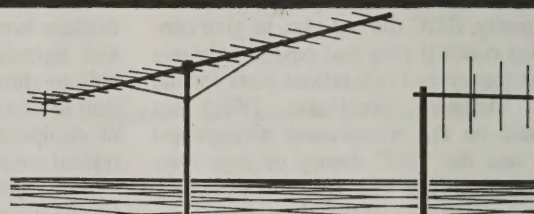
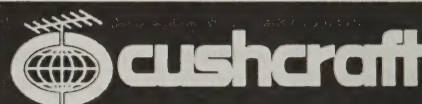
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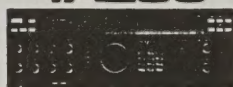
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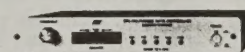
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C.O.D.

Deregulation of Mode Subbands Implemented October 1

□ Deregulation of Mode Subbands was not supposed to be implemented until next year. It was supposed to be held up at the Privy Council Office where everyone was preoccupied with the Goods and Services Tax. However, on September 26, during a conference telephone call with officials of CRRL and CARF, DOC announced that Deregulation of Mode Subbands would take place on October 1, the same date as for Restructuring of the Amateur Service.

On October 1, the subbands that Canadian amateurs traditionally used for phone, RTTY, ATV and the like disappeared. Canadian amateurs may now use any mode on any frequency within their amateur bands, subject only to the following bandwidth restrictions:

1.8–2.0, 3.5–4.0, 7.0–7.3, 14.0–14.35, 18.068–18.168, 21.0–21.45 and 24.89–24.99 MHz: 6 kHz

10.1–10.15 MHz: 1 kHz

28.0–29.7 MHz: 20 kHz

50–54 and 144–148 MHz: 30 kHz

220–225 MHz: 100 kHz

430–450 and 902–928 MHz: 12 MHz

All other amateur bands: not specified

What is the rationale for of these bandwidths? 6 kHz for most bands in the 1.8–24.99-MHz range will accommodate all popular modes—and even double sideband with carrier AM, if care is taken. The 1-kHz bandwidth for 10.1–10.15 MHz will accommodate CW and data, but not voice. This is consistent with the Amateur Radio community's attempts to minimize interference to the FIXED service, the primary user of this band. Interference could result in loss of this band. The 20-kHz bandwidth for 28–29.7 MHz band will accommodate FM voice and repeaters. The 100-kHz bandwidth for 220–225 MHz will accommodate high-speed data. The 12-MHz bandwidth for 430–450 and 902–928 MHz will accommodate the vestigial sideband of a conventional 6-MHz ATV signal.

Why deregulation of mode subbands? Deregulation will result in less work for DOC, and it will allow Canadian amateurs to use new technologies as soon as they become available, without waiting for regulations changes that can take up to four years. However, especially on the 80–10-metre bands, deregulation will require Canadian amateurs to exercise considerable restraint to avoid causing problems for amateurs outside of Canada.

CRRL is asking Canadian amateurs not to transmit phone on traditional CW frequencies, and not to run data on tradi-



The multitude assembled at the 9th Computer Networking Conference, London, Ontario, September 22: 134 attended. (VE3GRO photo)

tional phone frequencies. CRRL is asking that, as much as possible, until voluntary band plans consistent with IARU-recommended band plans are developed, Canadian amateurs continue to observe their traditional subbands.

□ A cursory look around the amateur bands in early October indicated that anarchy did not break out among Canadian amateurs as a result of DOC's Deregulation of Mode Subbands. Canadian amateurs were continuing to operate CW, SSB, data, etc. in their traditional subbands even though, legally, they could operate any mode anywhere in their amateur bands.

CPC 2-0-03

□ DOC gave, but DOC also took away. During the final week of September, CRRL received a copy of CPC (Client Procedures Circular) 2-0-03, Issue 1, dated September 1 but not yet officially released by DOC. The process outlined in CPC 2-0-03 entitled *Municipal Consultation on Non-Broadcasting Antennas and Antenna Supporting Structures*, the process that may become mandatory soon, is a potential nightmare for Canadian amateurs. Before erecting antennas or antenna supporting structures, amateurs will have to file forms with their municipal authorities and try to receive municipal approval, either in the form of a building permit or other written authorization. If they do not file because they believe their antenna or antenna supporting structure is not "significant" in the context of their local area, they face the possibility that, at a later date, they may have to dismantle or modify their antenna or antenna supporting structure. If an amateur files, and a

municipality objects to a particular antenna or antenna supporting structure, local DOC personnel will become involved. If a consensus cannot be reached, DOC will render a final decision.

It is not expected that DOC will deny any amateur a reasonable antenna system. Licensed radio stations remain under federal jurisdiction, and stations must have antennas to operate. But amateurs may be pressured to comply with unreasonable standards set by some municipalities, and there is a potential for an uninformed public concerned with aesthetics, possible radiation hazards, interference and the like, to make considerable trouble for an amateur who wants to erect even a modest antenna system.

□ At press time, CRRL was still unclear about the status of CPC 2-0-03. The existence of a second version dated September 20 appeared to indicate that the CPC was still under review. The September 20 version outlined DOC's criteria for "significant". A 60-foot tower would be "significant" in an urban area, but "insignificant" in a rural area. However, it could become "significant" if the rural area were a wildlife reserve. The CPC also sets 30-day time limits for municipalities that wish to object to an antenna or tower. CRRL and CARF are working together to prepare a response on behalf of the Canadian Amateur Radio community. More later.

MERGER MEETING

□ The CRRL-CARF Merger Committee met in Whitby, Ontario on October 14. The constitution for the new single Canadian

Happenings—continued on page 9

Improving the *Radio Act*: Interference and Susceptibility

CRRL has not forgotten the Jack Ravenscroft case. The following was submitted to DOC during the summer. It has been edited and shortened for QST Canada.

CRRL, the Canadian Radio Relay League, Inc., a nationwide non-profit association of 5000 radio amateurs licensed by the Department of Communications, submits its comments on Notice No. SMRR-001-90, *Canada Gazette, Part I*, 1990 June 02 (the Notice).

This Notice asks how to improve the Radio Regulations in the light of Parliament's new *Radiocommunication Act*. CRRL notes that a major change in the *Radiocommunication Act* is that the Minister now has clearcut authority to regulate all radiosensitive equipment (both radio and non-radio) which may be susceptible to the operation of a nearby transmitter. In CRRL's view, this new power is essential to protect both consumers and the operators of licensed transmitters. Susceptibility of consumer electronic equipment is of special concern to radio amateurs because most amateurs operate transmitters in urban and suburban areas close to such equipment.

As the Department knows, there has been explosive growth in consumer electronic products. The level of spurious emissions from devices which are intentional emitters of radio-frequency energy (RF), devices such as cordless telephones, is controlled by the Department's regulations in RSS-209. Effective 1989 January 1, the Department's regulations also control emissions from most digital apparatus, unintentional emitters of radiation.

In both cases, provisions have been made to protect radio reception from these devices even if they already comply with prescribed emission levels. For example, RSS-209 requires that a notice be included with each cordless telephone stating, in part: "Cordless telephones must not cause interference to any licensed radio service". And regulations controlling emissions from digital apparatus state: "Notwithstanding that a Class A or Class B digital apparatus does not exceed the limits for radio noise emissions prescribed by these Regulations, where the use of a digital apparatus causes interference to radio reception, the owner or operator of the digital apparatus shall forthwith restrict or suspend use of the digital apparatus until the digital apparatus has been suppressed."

Unfortunately, the onus for resolving interference problems resulting from excessive unwanted emissions continues to rest with the consumer of an offending device. While an owner of a licensed transmitter

could reasonably be expected to have access to the expertise required to suppress unwanted emissions from the transmitter, it is unlikely that a consumer of an unlicensed transmitter like a cordless telephone or from a digital computer, would have such expertise. Therefore, it is reasonable that the manufacturers of these products be required to take action.

Although radio amateurs are technically protected by the willingness of the Department to shut down, for example, a cordless telephone which causes interference, the unsuspecting consumer, often an amateur's neighbour who has purchased the telephone in good faith, would naturally be upset and blame the amateur if the amateur is the only one adversely affected. Should the amateur press a complaint, the consumer would have to discard a device which apparently (to the consumer) is functioning properly. The consumer has no recourse to the manufacturer who created the problem.

Our experience has indicated that manufacturers are unwilling to voluntarily suppress harmful emissions emanating from their equipment. For this reason, CRRL believes that, except for licensed transmitters, the manufacturer or importer of equipment should be required to protect consumer by suppressing the excessive emissions or replacing the offending equipment. Alternatively, the manufacturer or importer should be required to refund the full purchase price paid by the consumer. Given that we are a mobile society (there may be no immediate interference caused), these requirements should extend to the life of the product, not just for a warranty period.

With regard to RF susceptibility, CRRL notes that radiosensitive equipment will malfunction in the presence of virtually any type of transmitter including broadcast transmitters and pagers. Since most amateurs live in urban or suburban areas surrounded by neighbours who own a plethora of electronic equipment (which, nowadays, is more RF-susceptible than ever), amateurs are especially prone to receiving complaints.

We must all get along with neighbours, but we face an almost insurmountable task in responding to complaints. It appears that new radiosensitive equipment is being purchased at a rate equal to or exceeding the rate at which existing radiosensitive equipment can be suppressed. This can be confirmed through the Department's own records or through studies like the extensive study of hundreds of unresolved susceptibility problems in Ottawa's Barrhaven area, adjacent to various commercial and broadcast transmitters.

The problem has been exacerbated because manufacturers and importers of radiosensitive equipment used to suppress individual pieces equipment on a case-by-case basis. Now, many refuse to do so. To keep peace in a neighbourhood, transmitter operators are forced to suppress unfamiliar equipment purchased by others. The manufacturer completely avoids responsibility.

CRRL notes that the Department's RF-susceptibility standards for consumer electronic products are either non-existent or so low that they are virtually meaningless. CRRL has received conflicting signals from the Department as to its proposed direction in implementing susceptibility regulations under the new *Radiocommunication Act*. CRRL was encouraged by a notice dated 1990 May 14 from the Director, Spectrum Management Operations. The enclosed advance copy of Radio Information Circular 17 (RIC-17) described the susceptibility problem and attempted to implement, on a voluntary basis, a policy that the manufacturers or importers of radiosensitive equipment would repair the equipment, replace the equipment, or refund the consumer's money if the equipment failed in the presence of RF. The mandatory introduction of this "3Rs policy" (repair, replace, or refund) was recommended to the Minister by the Radio Advisory Board of Canada (RABC) several years ago. While the proposed RIC-17 contained a few unfortunate statements, and while it proposed only a voluntary implementation of the "3R policy", it did indicate that the Department was prepared to take limited action to control radiosensitive equipment, much of which was, at the time, not yet within the purview of the Minister.

CRRL was less pleased by the Department's proposals in *Gazette* Notice No. SMRR-001-90: "Field Strength and Transmitter Siting Requirements for AM, FM, and TV Broadcasting Stations". In that notice, the Department proposed augmenting anachronistic regulations holding broadcasters responsible for resolving susceptibility problems in receivers and even non-radio equipment located near their transmitters. CRRL strongly opposed this proposal. A copy of our submission to RABC was forwarded to the Department.

While the Department has taken steps to control spurious emissions, and while the Department is apparently prepared to take some very limited steps to control the susceptibility problem, actions taken in Europe seem to be far more substantial. Given that the market for consumer electronic products is effectively a world market dominated by large multinational companies,

mandatory regulations about to be imposed on products sold in the European market should be considered.

In Europe, beginning on 1992 January 1, all electrical and electronic equipment "placed on the market and taken into service" must comply with the objectives of the European Community EMC Directive (the Directive). This will apply to new and existing designs. The Directive states that (a) equipment shall not generate electromagnetic disturbances exceeding a level preventing radio, telecommunications and other apparatus from operating normally, and (b) the equipment shall have an adequate level of intrinsic immunity to electromagnetic disturbance so it can be expected to operate normally in the presence of RF.

International standards covering both electromagnetic interference (EMI) and electromagnetic susceptibility (EMS) have been issued by the Special Committee for Radio Interference (CISPR). Compatible European Standards have been developed, or are in the process of being developed, based on the CISPR standards. The European standards are the only technical basis for free movement of goods within the single European market. Any equipment which complies with these standards will be deemed to meet the essential requirements of the Directive.

Since, within 18 months, manufacturers are going to have to design equipment to meet EMI and EMS standards for the huge European market, Canada's failure to impose standards which are at least as stringent will result in multinational manufacturers dumping large quantities of substandard equipment into Canada. This kind of dumping took place several years ago, while the Department was setting EMI standards for digital apparatus.

The radio-frequency spectrum is a precious, scarce natural resource. To ensure continued enjoyment of the radio-frequency spectrum by all Canadians, CRRL respectfully requests that the Department do the following:

1) Impose mandatory EMI and EMS standards on all electrical and electronic equipment. Such standards should be at least as stringent as equivalent European standards and be in place by the same time as the European regulations, and should cover a range of equipment at least as broad as encompassed by the European regulations.

2) At the same time, to protect innocent consumers from defective products not complying with these standards, impose a mandatory "3R-program" encompassing all products except licensed radio transmitters. Such a program should encompass EMI and EMS, and extend to the life of each piece of equipment.

3) In the interim, impose a mandatory "3R-program", as in 2) above.

Respectfully submitted, *Bruce Balla, VE2QO, President, CRRL*

happenings—continued on page 9

Amateur Radio organization was updated from comments received from both boards of directors. Plans were discussed to hold the 1991 CARF Annual General Meeting and the 1991 Meeting of the CRRL Board of Directors in a common location in June, 1991. These meetings would be followed by a joint meeting of the CRRL and CARF boards of directors.

Plans were also discussed to set up committees to advise the new organization's board of directors on administrative structure, field organization, finances, headquarters, staffing, and publications. The Merger Committee will meet again in early December.

CRRL DIRECTOR ELECTIONS

□ A reminder to all CRRL members in the Ontario South and Quebec Regions: You are hereby resolicited for nominating petitions pursuant to an election for CRRL Regional Directors to serve for two-year terms of office that begin on 1991 January 01. Because of space limitations, a full election notice will not be reproduced here. Nominating petitions will be received at the CRRL Headquarters office until 1200 EST, 1990 December 14. For complete details, see 1990 October *QST Canada*, or contact CRRL Headquarters.—*W W Loucks, VE3AR, CRRL Secretary*

REPORT: 9TH COMPUTER NETWORKING CONFERENCE

□ One hundred and thirty-four amateurs from Canada and the US, and from as far away as Belgium, the Netherlands, Germany and Finland, attended the ARRL-CRRL 9th Computer Networking Conference, held in London, Ontario, on Saturday, September 22. Topics included PACSAT, next-generation amateur voice systems, 9600-baud packet systems and new networking techniques. The conference weekend ended with a meeting of the ARRL Digital Committee. Doug Lockhart, VE7APU, widely regarded as the "Father of Packet Radio" serves on this committee as a Canadian representative.

IARU UPDATE

□ CRRL Past President Tom Atkins, VE3CDM, now Secretary of IARU Region 2, attended the IARU Region 2 Executive Committee meeting held in Panama City on September 22-23. Tom reports it took 23 hours to cover an extensive agenda that dealt with band planning, the need for greater amateur use of the 18 and 24-MHz bands, beacons, the IARU Monitoring System, emergency communications, third-party traffic, and preparations for the upcoming WARC. In connection with the WARC, IARU Region 2 officials will soon be visiting the licensing authorities of every administration in IARU Region 2

(North and South America). Object of the visits: to remind licensing authorities of the value of Amateur Radio, and to ensure that Amateur Radio will be dealt with fairly at the upcoming WARC.

□ The US FCC has released a Second Notice of Inquiry, Docket 89-554, WARC-92 proceedings. The docket proposes that 6900-7200 kHz become AMATEUR worldwide. The allocation would be AMATEUR exclusive except that an existing secondary allocation to LAND MOBILE at 6900-7000 kHz would be retained. HF broadcasting would move to 7200-7525 kHz and use reduced carrier single-sideband emission to conserve spectrum. Proposed implementation date: 2007 July 01.

NOTES FROM ALL OVER

□ Special-event station ON4CLM (Canadian Liberation Movement) will operate October 29-November 4, to commemorate the liberation of Knokke-Heist, Belgium, by Canadian troops in 1944. Look for ON4CLM on the following frequencies: CW: 3.515, 7.012, 14.02, 21.02 and 28.02 MHz. SSB: 3.685, 7.045, 14.145, 21.245 and 28.545 MHz. The 1990 ON4CLM Award features the cap badge of the Cameron Highlanders of Ottawa. Cost: US \$5 or 10 IRCs. Proceeds are used to maintain memorials related to the liberation.

□ The US FCC recently fined KV4FZ, K2BFI and N5FX \$1000 each for willful interference to other amateur stations.

□ Amateur Radio has gained another royal operator. The King of Thailand, HS1A, joins King Hussein, JY1, of Jordan and King Juan Carlos, EA0JC of Spain, as ruling monarchs who hold Amateur Radio licences.



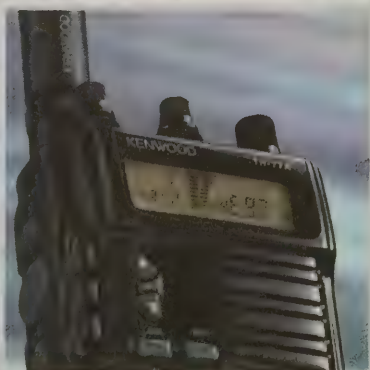
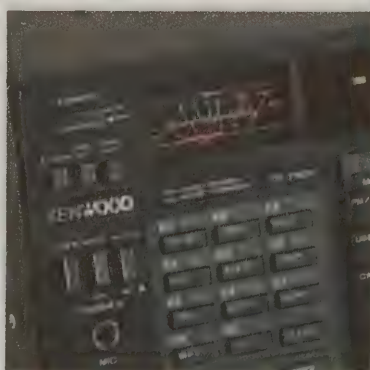
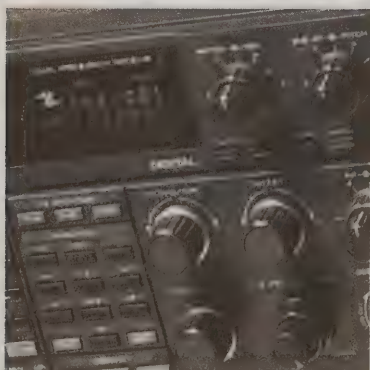
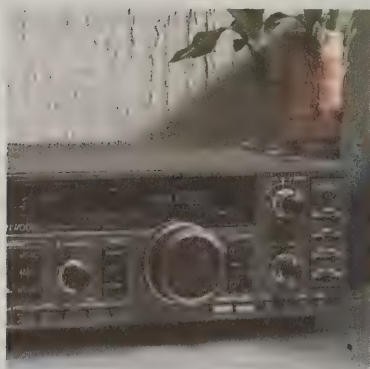
The CRRL-CARF Merger Committee recently visited CRRL Headquarters in London, Ontario. Checking out the CRRL Outgoing QSL Bureau (l-r): VE3ZJ, VE3AGS, VE3GRO, VE3GWS, VE3LYN and VE3MGY. (VE3DSS photo)

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- **Built-in automatic antenna tuner (optional)**. Covers 80—10 meters.
- **5 IF filter functions**
- **VOX, full or semi break-in CW**

- **Dual SSB IF filtering**
A built-in SSB filter is standard. When an optional SSB filter (YK-88S or YK-88SN) is installed, **dual** filtering is provided.
- **AMTOR compatible**
- **Adjustable dial torque**
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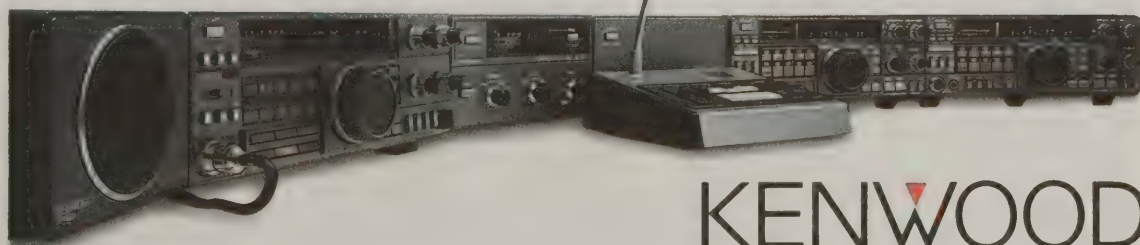


Optional accessories:

- AT-440 internal auto. antenna tuner (80 m – 10 m)
- AT-250 external auto. tuner (160 – 10 m)
- AT-130 compact mobile antenna tuner (160 m –

- 88SN 2.4 kHz/1.8 kHz SSB filters • MC-60A/80/85 desk microphones • MC-55 (8P) mobile microphone • HS-4/5/6/7 headphones • SP-41/50/50

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- mobile speakers • MA-5/VP-1 HF 5 band mobile helical antenna and bumper mount • TL-922A 2 kw PEP linear amplifier • SM-220 station monitor (no pan display) • VS-1 voice synthesizer • TU-8 CTCSS tone unit • PG-2C extra DC cable.

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|-------------------------------------|------------|---------|---------|--------|--------------------------|
| Talk to the World | \$20.00 | \$18.00 | \$1.00 | 102 | <input type="checkbox"/> |
| Theory Questions Book | 10.00 | 9.00 | .75 | 112 | <input type="checkbox"/> |
| Regulations Questions Book | 10.00 | 9.00 | .75 | 190 | <input type="checkbox"/> |
| Beginner's Code Tape | (OT) 12.50 | 11.75 | 1.00 | 201 | <input type="checkbox"/> |
| 5-10 WPM Code Tape | (OT) 12.50 | 11.75 | 1.00 | 2027 | <input type="checkbox"/> |
| 10-15 WPM Code Tape | (OT) 12.50 | 11.75 | 1.00 | 2035 | <input type="checkbox"/> |
| First Steps in Radio, W1FB | 8.00 | 7.25 | .75 | 470 | <input type="checkbox"/> |
| La radioamateur—un univers fasciant | 24.00 | 23.00 | 1.00 | 290 | <input type="checkbox"/> |
| En onde | 13.00 | 12.00 | .75 | 295 | <input type="checkbox"/> |
| Premier pas en radio, W1FB | 8.00 | 7.25 | .75 | F900 | <input type="checkbox"/> |
| Operating an Amateur Radio Station | 1.25 | 1.25 | 1.25 | 300 | <input type="checkbox"/> |
| Help for New Hams, W1FB | 12.50 | 11.25 | 1.00 | 475 | <input type="checkbox"/> |

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| Lapel Pins | (OT) 3.00 | 3.00 | .75 | 130 | <input type="checkbox"/> |
| Large Cloth Diamond (5") | (OT) 3.00 | 3.00 | .75 | 141 | <input type="checkbox"/> |
| Small Cloth Diamond (3") | (OT) 2.00 | 2.00 | .75 | 151 | <input type="checkbox"/> |
| ARES Circular Patch (4") | (OT) 4.00 | 4.00 | .75 | 161 | <input type="checkbox"/> |
| Set of 3 CRRL Logo Decals | (OT) 1.00 | 1.00 | .75 | 180 | <input type="checkbox"/> |

OTHER

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|-------------------------------|-------|-------|------|-----|--------------------------|
| Fifty Years of ARRL | 5.75 | 5.25 | .75 | 460 | <input type="checkbox"/> |
| From Spark to Space | 25.00 | 22.50 | 1.00 | 465 | <input type="checkbox"/> |
| Night Signals (adventure) | 6.25 | 5.75 | .75 | 856 | <input type="checkbox"/> |
| Tompkins Adventures (6 books) | 30.00 | 27.00 | 1.50 | 855 | <input type="checkbox"/> |
| 200 Metres and Down | 10.00 | 9.00 | .75 | 560 | <input type="checkbox"/> |

OPERATING AIDS

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|---|------------|-------|-------|-------|--------------------------|
| 1991 North American Callbook | (OT) 40.00 | 36.00 | 2.00 | 722 | <input type="checkbox"/> |
| 1991 International Callbook | (OT) 40.00 | 36.00 | 2.00 | 712 | <input type="checkbox"/> |
| Log Book (pack of 3) | (OT) 12.00 | 10.00 | 2.00 | 122 | <input type="checkbox"/> |
| Super Log Book (pack of 3) | (OT) 18.00 | 16.00 | 2.00 | 126 | <input type="checkbox"/> |
| Radiogram Forms | (OT) 2.50 | 2.25 | 1.50 | 171 | <input type="checkbox"/> |
| Grid Locator for North America | (OT) 2.00 | 1.50 | 1.00 | 800 | <input type="checkbox"/> |
| DXCC Countries List | (OT) 2.00 | 1.50 | 1.50 | 812 | <input type="checkbox"/> |
| DXCC Companion | (OT) 7.50 | 6.75 | .75 | 805 | <input type="checkbox"/> |
| 1990 Net Directory | (OT) 2.00 | 1.50 | 2.00 | 824 | <input type="checkbox"/> |
| ARRL World Map | (OT) 14.00 | 12.50 | 2.50 | 840 | <input type="checkbox"/> |
| Callbook <i>folded</i> Map of the World | (OT) 6.50 | 6.00 | 1.00 | RA10F | <input type="checkbox"/> |
| Callbook Prefix Map of the World | (OT) 8.50 | 7.75 | *3.50 | RA10 | <input type="checkbox"/> |
| Callbook Prefix Map of N America | (OT) 8.50 | 7.75 | *3.50 | RA11 | <input type="checkbox"/> |
| Callbook Great Circle Map of World | (OT) 8.50 | 7.75 | *3.50 | RA12 | <input type="checkbox"/> |

*These maps can be shipped together. Add \$3.50 postage only once per order.

PACKET AND COMPUTERS

| | | | | | |
|--------------------------------------|-------|-------|-----|-----|--------------------------|
| Gateway to Packet Radio, 2nd Edition | 15.00 | 13.50 | .75 | 901 | <input type="checkbox"/> |
| Proceedings, 9th Computer Conference | 15.00 | 13.50 | .75 | 604 | <input type="checkbox"/> |

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ANTENNA BOOKS

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|------------------------------------|------------|---------|---------|--------|--------------------------|
| ARRL Antenna Book | \$22.50 | \$20.50 | \$1.50 | 411 | <input type="checkbox"/> |
| RSGB HF Antennas for All Locations | 19.00 | 17.00 | 1.00 | 330 | <input type="checkbox"/> |
| Antenna Compendium #1 | 12.50 | 11.75 | 1.00 | 420 | <input type="checkbox"/> |
| Antenna Compendium #2 | 15.00 | 13.50 | 1.00 | 421 | <input type="checkbox"/> |
| Antenna Notebook, W1FB | 12.50 | 11.25 | .75 | 405 | <input type="checkbox"/> |
| Novice Antenna Notebook, W1FB | 10.75 | 9.75 | .75 | 425 | <input type="checkbox"/> |
| Antenna Impedance Matching | 19.00 | 17.00 | 1.00 | 450 | <input type="checkbox"/> |
| Yagi Antenna Design | 19.00 | 17.00 | 1.00 | 630 | <input type="checkbox"/> |
| All About Cubical Quads | 12.50 | 11.25 | 1.00 | RP110 | <input type="checkbox"/> |
| All About Vertical Antennas | 13.75 | 12.50 | 1.00 | RP120 | <input type="checkbox"/> |
| Reflections | 25.00 | 22.50 | 1.00 | 885 | <input type="checkbox"/> |
| Simple, Low-Cost Wire Antennas | 15.00 | 13.50 | 1.00 | RP140 | <input type="checkbox"/> |
| Transmission Line Transformers | 12.50 | 11.25 | .75 | 880 | <input type="checkbox"/> |

OPERATING

| | | | | | |
|---|-------|-------|------|-----|--------------------------|
| Operating Manual | 19.00 | 17.00 | 1.50 | 522 | <input type="checkbox"/> |
| Complete DXer, 2nd edition | 16.00 | 14.50 | .75 | 441 | <input type="checkbox"/> |
| Low Band DX | 12.00 | 11.00 | .75 | 890 | <input type="checkbox"/> |
| Low Band DX Software (available for many computers; send SASE for prices) | | | | | |

TECHNICAL

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|-------------------------------|-------|-------|------|-----|--------------------------|
| 1991 ARRL Handbook | 31.00 | 28.00 | 2.00 | 490 | <input type="checkbox"/> |
| ARRL Electronics Data Book | 15.00 | 13.50 | .75 | 516 | <input type="checkbox"/> |
| Radio Frequency Interference | 6.25 | 5.75 | .75 | 533 | <input type="checkbox"/> |
| Solid State Design | 15.00 | 13.50 | 1.00 | 551 | <input type="checkbox"/> |
| Hints and Kinks, 12th edition | 10.00 | 9.00 | .75 | 512 | <input type="checkbox"/> |
| QRP Notebook, W1FB | 8.00 | 7.25 | .75 | 590 | <input type="checkbox"/> |
| QRP Classics | 15.00 | 13.50 | 1.00 | 595 | <input type="checkbox"/> |
| Design Notebook, W1FB | 12.50 | 11.25 | .75 | 600 | <input type="checkbox"/> |
| Transmitter Hunting | 24.00 | 21.50 | 1.00 | 390 | <input type="checkbox"/> |

VHF-UHF

| | | | | | |
|-----------------------------------|-------|-------|------|-------|--------------------------|
| All About VHF Amateur Radio | 15.00 | 13.50 | 1.00 | RP130 | <input type="checkbox"/> |
| Satellite Anthology | 10.00 | 9.00 | .75 | 700 | <input type="checkbox"/> |
| Satellite Experimenter's Handbook | 12.50 | 11.25 | .75 | 540 | <input type="checkbox"/> |
| Space Almanac | 27.50 | 25.00 | 1.50 | 705 | <input type="checkbox"/> |
| Weather Satellite Handbook | 25.00 | 22.50 | 1.00 | 695 | <input type="checkbox"/> |
| UHF/Microwave Experimenters | 25.00 | 22.50 | 1.00 | 365 | <input type="checkbox"/> |
| Microwave Handbook, Vol. 1 (RSGB) | 44.00 | 40.00 | 1.00 | 345 | <input type="checkbox"/> |

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The CRRL Field Organization Forum

SECTION MANAGER ELECTION NOTICE

To all CRRL members in the Ontario Section: You are hereby solicited for nominating petitions pursuant to an election for Section Manager. Because of space limitations, a full election notice will not be reproduced here. Nominating petitions will be received at the CRRL Headquarters office until 1600 EST 1990 December 07. For complete details, see the 1990 October issue of *QST Canada*, or contact CRRL Headquarters. —*Jack Strangleman, VE3GV, Field Services Manager*

SECTION MANAGER ELECTION RESULTS

Congratulations to Bruce Rattray, VE5RC, and Harold Moreau, VE2BP, who were recently reelected Section Managers, Saskatchewan and Quebec Sections respectively. Both ran unopposed, eliminating the need for a balloted elections.

REPORTS FOR AUGUST 1990

Alberta: SM/STM/DEC: Bill Gillespie, VE6ABC; ASM: VE6AMM; SEC/TC: VE6AFO; OO: VE6TY. Due to added business pressures as well as family commitments, I will be stepping down from all my CRRL positions as soon as there are replacements. I have enjoyed my many years with CRRL, but I now find that new blood is needed. The VE6QST call sign has been reassigned to Don Wilcox, VE6CG, of Calgary. Good luck, Don. Fall club meetings and amateur classes will be getting under way in the next few weeks. I guess that winter is coming!

British Columbia: SM/SEC: Ernie Savage, VE7FB. British Columbia Emergency Net Manager Ferdi, VE7EJU, has been fighting forest fires during this month of August, so no report. British Columbia Public Service Net Manager Ford, VE7DDF, reports high: 164, low: 90 and total: 3004. 80 metres was really rough this month. Joe Stanley, VE7ESA, Naksup, is seriously ill and in hospital in Kelowna. We spent one morning at CY7PNE, Pacific National Exhibition, reading the log for the previous five days, they sure had some nice DX listed, and, of course, many locals. Code and theory classes are gearing up for the big rush this year.

Manitoba: SM: Bill Crooks, VE4JR; ASM: VE4IX; SEC: VE4TM; ATC: VE4ADP; NMs: VE4LB, VE4IX, VE4TE. By the time you read this, most of our summer holidays will have been used up, and it will be time to get work on antennas done before the cold weather comes—although some of us like to work on towers and all those good things only when the temperature is zero. The 10th Regional Traffic Net (10RN) serves the north-central US states, Manitoba and Saskatchewan. Manitoba does have some amateurs who check in, but more help is needed. This net meets daily at 1330 and 1545 on 7232–7237 kHz, +/- QRM. On the first session, traffic is picked up from Iowa, Kansas, Manitoba, Minnesota, Missouri, Nebraska, North Dakota, South Dakota and Saskatchewan. The traffic is then taken to the Central Area Net (CAN) by designated stations where it is passed on to the other Region Nets. At the same time, 10RN stations check into

Reports invited: CRRL Section Managers (SMs) and their Section-level assistants coordinate traffic handling, emergency communications and bulletin service across Canada. Your SM (name and address appears on page 2 of this *QST Canada*) welcomes reports of individual and club activities for publication in this column. Activities do not have to be related to the CRRL Field Organization or to CRRL.

CAN, they pick up traffic for the 10th Region. This traffic is passed to various state and provincial reps, and then on to local nets and, eventually, the addressee. Plans are being made to also use packet radio to pass traffic in and out of the 10th region. This will be a more reliable method for passing traffic and other data. Dave Lawrence, VE4ORP, has left Winnipeg for a posting in Ontario. We will miss him and his valued contribution to Winnipeg ARC. Our loss in Ontario's gain. Good luck, Dave! Long weekends, both in July and August, are great times to expose the public to Amateur Radio by having amateur stations forward messages to friends in various parts of the country. Look at it as the long-term investment in maintaining good public relations.

Maritimes-Newfoundland: Acting SM: Carl Anderson, VE1UU; STM: Mel Lever, VE1VX; BM: Brent Taylor, VE1JH. Radio amateurs from coast to coast were saddened to learn that Brit Fader, VE1FQ, of Lower Sackville, Nova Scotia, died on August 16. Brit was 78 years old. He had been a licensed radio amateur for 55 years and served as VE1 QSL Manager for 50 years. For many years, he ran the Maritimes Phone Net, seven days a week. Brit held several positions in Halifax ARC, and generously provided communications for Waverly Ground Search and Rescue, and countless Canadian Armed Forces personnel and their families overseas. He was recently inducted into the Canadian Amateur Radio Hall of Fame. VE1FQ will be sadly missed, but fondly remembered by us all. John Perkins, VE1FH, of Windsor Junction, Nova Scotia, has joined the Board of Trustees of the Defence of Amateur Radio Fund. John is three-time president of Halifax ARC, and was active in the preparations for WARC '79. Al Thurber, VE1AKT, of Fredericton, New Brunswick, read about Islands-on-the-Air (IOTA) in my August article, and realized that he had been active on all bands from a rare IOTA island since 1987! Al has a cottage at Freeport, on Long Island, Nova Scotia, one of the islands in the IOTA Grand Manan group. Al recently helped Bill Linkletter, VE1SEA, of Freeport get on the air, so Long Island may be a lot less rare in the future. While on vacation in early August, ARRL Executive Vice President Dave Sumner, K1ZZ, operated from PEI using the CRRL call sign VY2QST. Dave reported that in 28 hours of operating, he made 2788 CW contacts with 87 countries. Special thanks to Bob Morrison, VY2ZZ/VY2QST, for making arrangements so Dave could use the VY2QST call sign, and to the propagation gods!

Ontario: SM: Larry Thivierge, VE3GT; BM: VE3GSA; SEC: VE3GV; STM: VE3CYR; TC: VE3EGO. As we head back into the fall operating schedule, NTS nets operating within the Ontario are as follows (* denotes a Section net). All amateurs are welcome on the nets and encouraged to participate:

| Net | MHz | UTC | Manager |
|----------|-----------|--------|---------|
| OQN (S)* | 3.667 | 1830dy | VE3GSQ |
| OQN (D)* | 3.667 | 2100dy | VE3ORN |
| OLN | 147.66(-) | 2330dy | VE3POJ |
| OQN (E)* | 3.667 | 0000dy | VE3CYR |

| | | | |
|----------|-----------|----------|--------|
| OPN* | 3742 | 0000dy | VE3BDM |
| KTN | 147.96(-) | 0200TThS | VE3AJN |
| OQN (L)* | 3667 | 0300dy | VE3GSQ |

Brockville has a TheNet node running now. After some playing around, and with the aid of a homebrew four-cavity multicoupler, the unit was installed into the feedline for the Brockville voice repeater, VE3BAT. BROCK can be used as a node or digipeater, but, in most cases, it is best used as a node. Neighbouring nodes are CAPITL, PLB, QUINTE and RCSIGS. VE3IWIJ advises that the next step will be the complete rebuilding of the VE3BAT voice repeater. Speaking of VE3BAT, it is VE3BAP, not VE3BAT, who is now VE3EM, reported in an earlier column. Regrettably, I report that VE3BGA and VE3PUE have become Silent Keys. Sault Ste-Marie hosted the Friendship Games between Saginaw, Michigan, and the "Soo". Algoma ARC provided communications between playing fields throughout the city and City Hall, forwarding, messages, scores and two emergency calls requiring ambulance dispatch. In all, eighteen Canadian and seven US amateurs took part. Peterborough ARC held a successful Amateur Radio demonstration at Lansdowne Place Mall. Packet connections were made with DL9YL and DL9WB via a gateway mode on 15 metres. VE3MPZ (ex-ON9CBF) and VE3DQL are active on packet and AMTOR from the Petawawa-Pembroke area. VE3JPC is now VE3XJ, VE3FVO is VE3ZC, and VE3HGA is VE7HGA. VE3MIG is a new amateur. VE3s ANO, BUP, DY, GFI, HVA, HYS, IMT, NJM and PMR provided communications for the National Capital Triathlon.

Quebec: SM: Harold Moreau, VE2BP; STM: VE2EDO; SEC: VE2LYC; BM: VE2ALE. New appointments for QRS and OBS are solicited. Contact your SM for details. Plusieurs membres de l'UMS ont participé au Marathon international de Montréal le 2 septembre, en maintenant les communications. Le Petit Train du matin a perdu son dévoué conducteur. Henri, VE2AGA, est décédé le 28 août. Le réseau continue à opérer malgré cette lourde perte.

Saskatchewan: SM: Bruce Rattray, VE5RC. Happy Thanksgiving to everyone. I sincerely hope we all have something to be thankful for in our lives. Congratulations to Bruce Boulton, formerly VE5WAW, on his new call, VE5NX. VE5s AAA, BW, GHC, IC, JML and KZ provided communications for the Kids' Triathlon held at Regina's Wascana Park on August 11. On August 18–19, a two-day bicycle tour was added to Regina's growing list of public service events. Purpose: to raise money for multiple sclerosis. Trying to keep track of 100 bicycles spread over a 50-km stretch of busy highway from Regina to Fort San and back was a new challenge, but the \$50,000 raised made it worthwhile. Helping on the radios: VE5s AAA, BW, IC and KZ. VE5s AGA, BE, BW, CPU, DSC, EE, ELJ, EP, GHC, RC, TH and UU helped with the August 25 Downtown Dash. Boss lady was VE5JML. RARA Amateur Radio classes began on September 13. For information, contact John, VE5EP. RARA's construction classes meet each Monday evening at Ken Jenkins School—and later at the Science Centre. 73!

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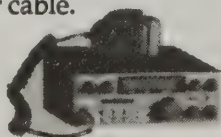
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| • PB-3 Battery Pack (7.2VDC 800mAh) | \$76 |
| • PB-4 Battery Pack (7.2VDC 1600mAh) | \$109 |
| • BT-5 Battery Case (AA size batteries) | \$29 |
| • PG-3E Filtered Cigar Lighter Cord | \$32 |
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Bringing in New Amateurs

I attended the inauguration of the new president of the University of Toronto recently, and something during the ceremony hit a nerve. The invocation was given by Ms D Longboat, Coordinator, Aboriginal Health Professions Program. She offered a traditional Mohawk prayer of thanksgiving to the Creator. One of the offerings was for the "unseen forces" like the wind, set into motion by the Creator to do certain things. She stated that man had a special place in the scheme of things, and that all of us had a responsibility to our environment and surroundings because we have the gift of reason and hands that can create.

It all brought to mind that we, as amateurs, must use those unseen electromagnetic forces in our hands with great care. One way to do that is to observe bandplans developed by national societies like CRRRL. It's everyone's responsibility to familiarize themselves with these bandplans and to observe them carefully. One way to do this is to make sure that Amateur Radio instructors educate potential amateurs in this regard. I also hope that every Amateur Radio instructor out there will advise potential amateurs that there are more options for communication open to them on VHF and UHF than just the ubiquitous 2-metre FM. I hope that through training manuals like *Talk to the World*, they realize that SSB and even CW are viable mode of communications on the VHF-UHF bands, that DXing can be fun in the same sense that it is on HF, that VHF-UHF experience can serve as good training for future upgrading.

I hope that Amateur Radio instructors encourage newcomers to experience the sense of discovery and accomplishment that one can feel only after working that first DX station on 6 metres, or VE7BQH or W5UN via the moon on 144 MHz—without big antennas and a kilowatt, or using the OSCAR satellites. Let's encourage new people to utilize all modes of communication, to operate more, much more than just 2-metres FM. Let's give them a chance to see the diversity that's out there. Let's give them a chance to experiment, to get hands-on experience at building receivers, antennas and other hardware systems. Let's hope that what I've just said even encourages some "old timers" to try CW and SSB on the bands above 50 MHz. How about it?

ARRL JUNE AND SEPTEMBER VHF CONTEST REPORT

We didn't have room to report on the June contest last time so we are going do a bit

of both the June and September contests now. For the June contest, Larry, VE6KC, and company from Novatel ARC went back to Plateau Mountain. They did well from their vantage point in the Kananaskis area 50 miles southwest of Calgary (DO20), 8200 feet above sea level. It's a lovely area to see but as Larry says, "It is somewhat difficult to get to, and once there, it can be a miserable place to spend a weekend, especially if the weather turns foul. However, it is well worth the effort if it encourages weak-signal work on our VHF-UHF bands. There is much more to these bands than FM and repeaters. I feel the message is being heard out here."

Larry, Les, VE6CA, Don, VE6EY, Larry, VE6VQ, and Paul, VE6PY, operated the usual VHF bands and 1296 MHz as well. They plan to bring 902-MHz gear in the future. It's great to see this kind of leadership in the West. Keep it up!

The September contest found Larry and company back at their favourite spot. Larry found that results were not as good as in June, but still a lot better than in last September. Most memorable contact was with VE6XT in the Cypress Hills area (DN 49), almost 200 miles away, using only one watt on 1294-MHz FM! In all, the group worked nine stations in five grid squares on 1294 MHz!

High-score winners for the June and September contests were as follows:

| Category | June | September |
|-------------|--------|-----------|
| 50 MHz | VE5UF | VE3ASO |
| 144 MHz | VE3KDH | VE3KDH |
| 144 MHz QRP | | VE3IMI |
| 220 MHz | VE3KDH | VE3KDH |
| 432 MHz | VE3KDH | VE3KDH |
| 903 MHz | | VE3ASO |
| 1296 MHz | VE3EMS | VE3ASO |
| 2304 MHz | | VE3ASO |
| 10 GHz | | VE3ASO |

Thanks to all who sent logs including: VE3SST, VE3BFM, VE6AFO, VE6NOV (multiop portable), VE3DJ, VE3IMI, VE4AQ, VE3BGH, VE3BZE, VE3KDH, VE3EMS, VE3ASO (portable FN15), VE3WCB and VE3BQN (multiop), VE7PRC (VE7EHQ), VE6TA, VE2MUS (multiop) and VE1XH (VE1MUF).

In the future, to encourage activity and prevent domination by one particular region, certificate standings will be split as follows: high scores Maritimes, high scores Quebec/Ontario, high scores Western Canada (including the territories). So let's see some regional competition. That Toronto VHF Society certificate may be yours! Don't forget the ARRL January

VHF Sweepstakes. Send your logs to ARRL, 225 Main St, Newington, CT 06111, and a copy of the cover sheet only to yours truly. Let's see more Canadian scores in the results!

50 MHz

Hold onto your hats everyone! The solar flux in mid-October reached 200, and our friends in the southern US reporting in on 28.885 MHz say they are hearing video to the south and things are starting to shape up. Hopefully we may have some DX to report for the next column—if old Sol continues to give us a boost. Does anyone know how to earn the favour of the DX gods?

Here's some 6-metre news from abroad, thanks to the KA3B *6-Metre Report*: OX3LX is scheduled to be operational from GP80 at Prins Christian Sund between October 10–20. Anyone who has worked YN3CC should QSL to YN1CC, direct only. Include with four IRC's or US \$1. Write to José Cespedes, Box 2971, Managua, Nicaragua. Look for FG (Guadeloupe) to be active around November 10 or 11. Look for 6W1QC from Senegal later this fall. He will be running a TS-440, a homebrew transverter, and a 4X150AX2 amplifier to a 6-element beam. To date, he has heard 40–50 countries, and awaits permission to transmit. Turkey will soon be QRV on 6 metres. Nick G3KOX, who, along with Nev, G3RFS, recently gave many Europeans their first CU (Azores) contact on 6, has received a permit for 6-metre operations from Turkey. This trip should take place after mid-November on. ZL1MQ reports that "a phone call from ZL3TIC brought news that a group in Christchurch has received permission to operate on 6-metres on a 24-hour basis. Look for ZLs this fall. FO5DR (BH52) is a new "breakable" beacon active on 50.050 MHz. It runs 100 watts to a variety of yagis. Monitor 28.885 MHz 24 hours a day for updates on 6-metre activity.

Contest! The UK 6-Metre Group Contest is scheduled to run for 48 hours from 000 UTC, November 17, to 2400 UTC, November 18. The object is to work as many countries, grid squares or UK counties as possible. Score is QSOs times multiplier (countries, grid squares, counties). However, only one QSO is allowed per station, so you can't get the station's grid square and county and count both for multipliers: it is one or the other. Send entries to Richard Lax, G4AHN, 1 Gardeners Hill Road, Farnham, Surrey, GU104RL, England—by December 1.

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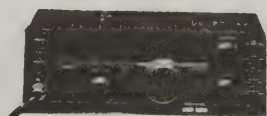
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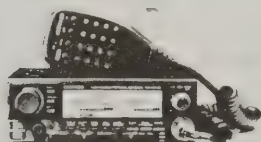
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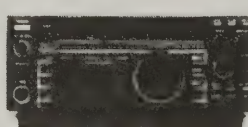
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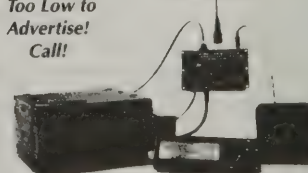
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144 MHz

During the August Persiads meteor shower many VHFers had great success working DX. As I mentioned in an earlier column, meteor scatter or "MS" as it is more commonly known, has been and continues to be a viable mode of long distance communication, particularly at 50, 144 and 220 MHz.

I am pleased to report a high level of activity from coast to coast on MS. Stations active during the Persiads shower included VE3KDH (FN03), VE3FN (FN25), VE5LY (DO70), VE3KRP (EN58), VE3OAT (FN25), VE4AQ (EN19), and many other Canadians. Ross, VE5LY, reported from Regina that the Persiads this year were "memorable". Best DX of the shower: Ray, VE3FN, in Ottawa. After a disappointing set of skeds last year, the two connected in rapid fashion, bridging a distance on 1372 miles and ushering in the first direct VE5/VE3 QSO on 144 MHz! Yours truly was listening in during the sked and heard signals both from Ross on forward scatter and Ray on backscatter. Ross also worked N9AQ/Ø (EN27), N7AUV (DN07), KJ7F (DN13), KU8Y (EN62), WA8MZQ (EN80), K9VGE/9 (EN67), WA9JFM (EN52), KAØGGI AND WØFY (EM48) on the same burst, NØBSA (DM79) and VE3KRP (EN58). Moving east, Jim, VE4AQ in Winnipeg (EN19), wrote that he found that the August 12 meteor burns were not all that strong—but they were frequent and loooong! Best DX was WS4F (EM84) at well over 1200 miles. Fastest contact was KI3W (FN10)—one minute ten seconds, followed by a contact of just over 3 minutes with Ray, VE3FN! Ed, VE3KRP in Thunder Bay, also worked Ray.

Kevin, VE3KDH, found the shower most productive. Kevin worked WB4DBB (FM07), WQØP (EM39), N4VC (EM53), N5WS (EM12), WBØTEM (EM12), WØFY (EM48), W7XU/0 (EN13), KDØHE (EN00), NØAKC (EN44), W5UGO (EM16), NØJUR (EM37), WØFDK (EM47), WA4VWR (EM55), W5RCI (EM44), K5SW (EM25), WA5NFC (EM45), VE2DFO (FN25) on backscatter, WD4MGB (EL87), NA4I (EM83), K9VGE/8 (EN67) and VE3KRP. Kevin felt that the shower peaked between 0900–1200 UTC, August 12. Look out for next year. Let's get more of you with those 100-watt stations going on meteor scatter. Being a "ping jockey" is fun!

Thanks to Jim, VE3JJX, Stan, VE3DNR Jock, VE3DJ Jim, VE4AQ, Ken, VE6AFO, and Ed, VE3KRP for their letters.

220 MHz

Despite the bad weather here in Ontario, conditions were interesting for the CRRL 220-MHz Sprint. Active stations included

VE3SST, VE3BFM, VE3DSS, VE3KDH and VE3EMS. Contacts were made with stations as far away as FM18, FM19, and FM29 so there is activity and propagation there, if one wants to take advantage of it.

432 MHz

Interesting news from the east coast thanks to John, VE1BVL. During the September contest, he combined moonbounce QSOs with a fantastic tropo opening during the last two hours of the contest to produce 37 QSOs in 19 grid squares. Moonbounce contacts included SM2CEW, SM4IVE, OE5JFL and DL9KR. Best DX via the terrestrial path was Virginia. John worked all this from his summer QTH. At time of writing he was setting up an EME station at his winter location. VE1BVL runs 600 watts to six 22-element K1FO yagis. Keep up the good work John, and let's have more activity reports from out your way!

1296 MHz

The CRRL Fall Sprint generated some interest on 23 cm. A frontal system moving across the Great Lakes created enhanced conditions for VE3EMS and VE3ASO who managed S9 signals running into Dunnville (FN02) and Mountain (FN25, south of Ottawa). Peter, VE3EMS, also contacted VE3WCB, VE3DSS, and a number of W8 stations. As Murphy would have it, Clarke VE3WCB, got his Down East Microwave 1296-MHz amp, too late for the sprint. It had been held up in customs. Clarke and Peter, VE3EMS, ran a sked during the evening of October 5 and Peter was copying Clarke very well. The additional 30 watts certainly helps. Incidentally, these amplifiers use Mitsubishi power modules, and are simple to build and operate. The address for Down East Microwave is Box 2310, Troy, ME 04987.

VHF-UHF NETS

Thanks to Len, VE3BGH of Welland, Ontario, the Gaslight Net which meets nightly on 144.240-MHz USB has cracked the 100 check-ins barrier. Net members plan to change the net format somewhat. After meeting on 144 MHz, depending on which VHF activity night it is, stations equipped to operate on other VHF-UHF other bands will QSY there to increase activity. Monday is 144-MHz night; Tuesday, 220 MHz; Wednesday, 432 MHz; and Thursday, 903/1296 MHz. A great idea. Now let's get similar nets going in other areas of Canada, nets like North Bay's Muskeg Net which meets on 144.6 MHz at 1930 local time!

TRANSVERTER NEWS

After years of wandering in the Canadian wasteland, a new age is dawning thanks to Bob, VE3BFM of Sinclabs, and Hans, VE3CRU. Sinclabs is now producing

marvellous 20-watt output, "low noise" figure transverters for 144 and 220 MHz. If you want to save some money and get on VHF SSB, CW, packet or even FM, these rigs work! Incidentally, Bob and Neil, VE3SST, are working on portable stations using a Uniden HR2600 10-metre transceiver (the Radio Shack 10-metre transceiver will probably work equally well) as a multimode IF. With a bit of switching, this unit will get you a very manageable multiband mobile or portable station at a fraction of the cost of those Japanese multiband radios! Look into it, and look out for 50-MHz and 432-MHz transverters in the near future! Who says there isn't any equipment for SSB and CW? Remember, you read it first in *QST Canada*! For a catalog, contact Bob at 85 Mary St, Aurora, ON, L4G 3G9. Tell him we sent you.

1990 EME CONTEST

The second half of the annual International EME Contest is set for 0000 UTC November 3 to 2400 UTC November 4—a full 48-hour weekend.

That's it for now. Don't forget to report DX. Mention date, time, and band, of course. We would also like to hear about construction projects, new stations on the air, and VHF-UHF activity in your area: nets, SSB, CW, ATV, packet or FM. Merry Christmas and a wonderful DX-filled 1991 to all. —Dana Shtun, VE3DSS



"The Bird", Ted Sparrow, VE3BQN, and his 2-metre EME array. Eight Cushcraft Boomers put out a big signal from Elmvale, Ontario. (VE3CDM photo)

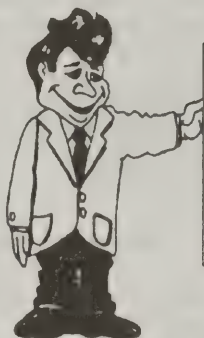
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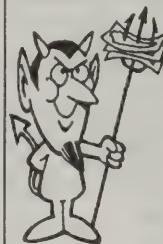
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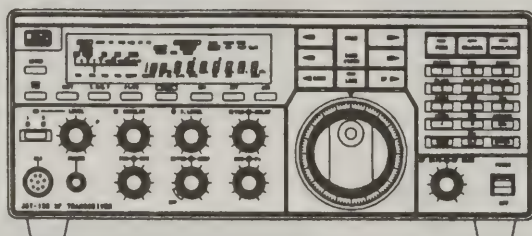
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|---------------|--------|
| Mon | closed |
| Tue-Thu | 9-5 |
| Fri | 9-9 |
| Sat | 10-2 |



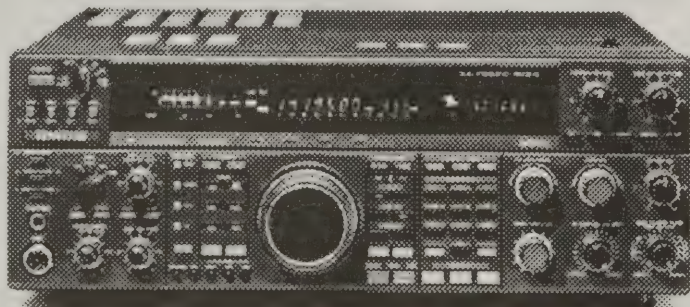
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Exercise Design

The design and staging of emergency exercises is an important responsibility for every emergency coordinator. Emergency Preparedness Canada, in its course on exercise design, put the challenge this way:

"Putting an exercise together may sound deceptively easy at first. After all, what's involved? Just choose a site, find some volunteers, pick a site for an emergency, blow the dust off the old emergency plan, and sound the alarm. It logically follows that everyone should respond quickly, and knowledgeably carry out their assigned responsibilities. With an extraordinary amount of luck, this could happen. But if the above is the extent of advance preparation, it is far more likely you will find yourself suddenly presiding over two emergencies—the original one, and the one caused by inadequate planning."

An emergency communications exercise may accomplish many things:

1. maintaining and sharpening message-handling skills.
2. giving operators experience working in a net subject to tight discipline.
3. testing equipment capability.
4. testing propagation
5. impressing observers from other emergency organizations by demonstrating the communications talents of the group.
6. keeping ARES members interested in emergency preparedness.

When designing an emergency exercise, you should start with a written statement of objectives. Recruit an exercise director. This may be the emergency coordinator (EC), one of the assistant emergency coordinators (AECs) or an experienced ARES member. It may be you. Whoever it is, he or she should take responsibility for designing and running the entire exercise in a way that will permit it meet the stated objectives.

The next step is developing a realistic scenario for the exercise. A good imagination is essential for this task—and there is room for some fun. For example, if the simulated emergency is an airplane crash, the appearance of a tornado part way through the exercise will add an extra element of surprise!

Carefully document the sequence and the timing of all events. Then decide what stations will be needed by the various emergency-response agencies. Stations may be needed at the simulated disaster site, headquarters of the response agencies, municipal emergency control centre, hospital, etc. One or more net controls stations (NCS) will be needed, depending

on the complexity of the operation.

Once you have determined the stations you'll need, select the amateur bands, actual frequencies, and mode or modes to be used. Most exercises are conducted on 2-metre FM. Use local repeaters, or if you are fortunate enough to have one, a portable repeater. To cover greater distances, select one or more HF bands. If your group has the facilities, plan to use packet radio or AMTOR. Don't overlook using CW for some of the messages.

At this point, you are ready to estimate the type and quantity of equipment, and

the number of operators that you'll need. Two operators per station is the absolute minimum: one to actually operate and the other to prepare messages, keep the log and so on.

The next step is creating realistic messages to be passed between various stations. Once more, let your imagination run riot! We have found it best to provide only the name and address of the simulated originator, and the text of each message. Let the operators put the text of each message into standard radiogram format before they transmit. This will provide

Field Organization Reports August 1990

CRRL Section Emergency Coordinator Reports

Reports were received from the following SECs (DECs and ECs reporting to SECs are listed in brackets) denoting a total ARES membership of 1006.

| Reporting | ARES Members |
|---|--------------|
| VE3GV (VE3s AFR, EFX, FFD, GNV, JJA, LKI, LPM, MB, SV, TNL) | 592 |
| VE4JR | 50 |
| VE6AFO | 265 |
| VE7FB | 99 |

CRRL Section Traffic Manager Reports

| Call | Orig | Rcvd | Sent | Divd | Total |
|--------|------|------|------|------|-------|
| VE1YS | 0 | 10 | 10 | 2 | 22 |
| VE1DLC | 0 | 0 | 7 | 3 | 10 |
| VE2BP | 4 | 14 | 17 | 14 | 49 |
| VE2GOP | 0 | 42 | 0 | 42 | 84 |
| VE2BP | 4 | 22 | 17 | 21 | 64 |
| VE2WH | 1 | 6 | 4 | 11 | 22 |
| VE2ALE | 0 | 9 | 2 | 0 | 11 |
| VE3CNE | 315 | 10 | 300 | 0 | 625 |
| VE3ORN | 0 | 46 | 246 | 8 | 300 |
| VE3BDM | 1 | 99 | 65 | 2 | 167 |
| VE3GNW | 0 | 64 | 77 | 1 | 142 |
| VE3ISD | 1 | 38 | 33 | 1 | 83 |
| VE3CYR | 0 | 53 | 21 | 0 | 74 |
| VE3AJN | 0 | 30 | 31 | 0 | 61 |
| VE3SB | 0 | 22 | 24 | 5 | 51 |
| VE3GT | 0 | 14 | 18 | 1 | 33 |
| VE3KCZ | 1 | 6 | 3 | 5 | 15 |
| VE3CVK | 1 | 5 | 3 | 3 | 12 |
| VE3MNI | 0 | 3 | 4 | 4 | 11 |
| VE3KXB | 0 | 3 | 7 | 0 | 10 |
| VE3WV | 0 | 2 | 7 | 0 | 9 |
| VE3BAJ | 0 | 2 | 5 | 1 | 8 |
| VE3LPM | 0 | 2 | 4 | 2 | 8 |
| VE4JA | 10 | 74 | 83 | 35 | 202 |
| VE4STU | 0 | 30 | 25 | 17 | 72 |
| VE4JR | 0 | 20 | 20 | 8 | 48 |
| VE4FP | 0 | 20 | 13 | 0 | 33 |
| VE4TE | 0 | 20 | 12 | 0 | 32 |
| VE4NE | 13 | 0 | 13 | 0 | 26 |
| VE6GUS | - | - | - | - | 47 |
| VE6CE | 0 | 13 | 7 | 2 | 22 |
| VE6XG | 0 | 9 | 9 | 3 | 21 |
| VE6AKY | - | - | - | - | 10 |
| VE6ABC | - | - | - | - | 5 |
| VE7ANG | 6 | 156 | 142 | 11 | 315 |
| VE7BNI | 31 | 88 | 130 | 41 | 290 |
| VE7FB | 9 | 42 | 17 | 10 | 78 |
| VE7CCJ | 12 | 27 | 12 | 2 | 53 |
| VE7OM | 1 | 25 | 19 | 1 | 46 |
| VE7BCL | 0 | 22 | 14 | 1 | 37 |
| VE7AVA | 1 | 20 | 12 | 1 | 34 |

| Call | Orig | Rcvd | Sent | Divd | Total |
|--------|------|------|------|------|-------|
| VE7FVG | 0 | 18 | 0 | 0 | 18 |
| VE7BVZ | 0 | 4 | 11 | 0 | 15 |

National Traffic System

| Net (Mgr) | Sess | QNI | QTC |
|----------------|------|-----|-----|
| APN (VE1YS) | 30 | 113 | 27 |
| KTN (VE3AJN) | 14 | 83 | 10 |
| OLN (VE3POJ) | 29 | 473 | 38 |
| OPN (VE3BDM) | 31 | 506 | 225 |
| OQN-D (VE3ORN) | 22 | 50 | 13 |
| OQN-E (VE3CYR) | 23 | 69 | 47 |
| MTN (VE4IX) | 74 | 73 | 14 |
| MEPN (VE4LB) | 12 | 58 | 8 |
| MWXN (VE4TE) | 31 | 609 | 30 |

Brass Pounders' League

This listing is available to amateurs who report to their SM a traffic total of 500 or a sum of originations and delivery points of 100 or more for any calendar month. All messages must be handled on amateur frequencies, using standard ARRL-CRRL form, within 48 hours of receipt.

BPL: None this month

Public Service Honour Roll

This listing is available to amateurs whose public service performance during the month indicated qualifies for 60 or more points in the following nine categories (as reported to their SM). Please note maximum points for each category: (1) Checking into CW nets, 1 point each, max 30; (2) Checking into phone/RTTY nets, 1 point each, max 30; (3) NCS CW nets, 3 points each, max 12; (4) NCS phone/RTTY nets, 3 points each, max 12; (5) Performing assigned NTS liaison, 3 points each, max 12; (6) Delivering a formal message to a third party, 1 point each, no max; (7) Handling an emergency message, 5 points each, no max; (8) Serving as an EC or NM for an entire month, 5 points max; (9) Participating in a public-service event, 5 points each, no max. Amateurs who qualify for Public Service Honour Roll 12 consecutive months, or 18 months out of a 24-month period, will be awarded a special certificate from CRRL Headquarters.

PSHR: VE3ORN (177), VE4JA (125), VE3GNW (102), VE3BDM (98), VE4LB (75), VE3CYR (68), VE4STU (63)

Service and Specialized Nets

Independent Net Managers: Your monthly reports are welcomed. Send to CRRL, Box 7009, Station E, London, ON N5Y 4J9.

| Net (Mgr) | Sess | QNI | QTC |
|-----------------------|------|------|-----|
| ARES Canada (VE3GV) | 5 | 77 | 2 |
| ARES Ontario (VE3GV) | 1 | 4 | 0 |
| CRRL ONTARS (VE3FQV) | 31 | 7997 | 0 |
| GBN (VE3BDM) | 31 | 73 | 20 |
| GBSSN (VE3BDM) | 31 | 84 | 35 |
| AURORA 1 (VE4WR) | 31 | 900 | 17 |
| AURORA 2 (VE4FP) | 31 | 1380 | 7 |
| ARES Alberta (VE6AKY) | 31 | 188 | 36 |

important training in adding a precedence, date, time, word count and the rest of the preamble.

Next, decide on the sequence in which messages are to be handled. Here in Kingston, we have tried two different approaches to assuring proper sequencing. One approach is to provide each message with a cue such as reference to a preceding message. This cue should initiate the transmission. Another approach is to mark, on each message, the time the message should be sent. We have had more success with the last approach. It does require that all watches be synchronized before the exercise begins, but it has the added advantage that two or more messages can be scheduled to be sent simultaneously. The resulting pileup of traffic will keep the NCS on its toes. With the first approach, we did find that operators could miss a cue, with the result that the exercise would grind to a halt until the exercise director intervened with instructions to delinquent stations.

In either case, sets of messages to be sent by each station should be put in sealed envelopes. The name of the station should be marked on each envelope, along with instructions as to when the envelope should be opened.

These are some of the key steps in designing an effective emergency communications exercise. If the planning is well done, the exercise should come off

with few hitches, the objectives should be met, and the outside observers will be suitably impressed. Good luck!

One final note: we know that many of you have extensive experience with exercise design. We would appreciate your comments of the ideas presented above, or a rundown on a recent exercise. If possible, include a photo of your people during the exercise. Take the photo the long way, and it may even make the cover of *QST Canada*!

TIP FOR NET CONTROLLERS

Jerry Wellman, WB7ULH, writes an interesting column on search and rescue communications in *Worldradio* magazine. In the July 1990 issue, this tip for net controllers:

"Most really good news announcers or radio personalities record their shows and then listen to themselves. They do this to improve their on-the-air delivery.

I use a quarter-speed cassette recorder on a voice-actuated switch (VOX) at home. When I call into a local net, it is fun to record the net and then listen to how well I did. What a learning tool!

If you're the NCS, have someone record the net for you. Take a listen to how you sound. I'll bet you'll notice things you never realized you said or did. It's difficult to tell someone to slow down or speak clearly. But send them a tape and they'll hear what you're talking about.

"I've collected quite a few tapes of search missions over the years. They're great for training new and "seasoned" operators." —Bob Boyd, VE3SV

ARES is a branch of the CRRL Field Organization, although you do not have to be CRRL member to take part. Check with your CRRL Section Manager or Section Emergency Coordinator for details.

We hope that this column, which also appears in The Canadian Amateur, will serve as an ongoing source of news and information about emergency preparedness activities in Canada. ARES members, particularly ECs, are invited to send information on what they are doing. We will share this information in future columns with the objective of increasing our ability to serve, should disaster strike. ■

MOVING?

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